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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

M4065.0407/P407

Application Number

09/887,021-Conf.
#6645

Filed

June 25, 2001

First Named Inventor

Terry R. Lee

Art Unit

2112

Examiner

T. U. Vu

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

☐

applicant /inventor.

☐

assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b)
is enclosed. (Form PTO/SB/96)

☒

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Registration number 41,198

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attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34.



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September 29, 2006

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☐

*Total of 1 forms are submitted.

Docket No.: M4065.0407/P407
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Terry R. Lee

Application No.: 09/887,021

Confirmation No.: 6645

Filed: June 25, 2001

Art Unit: 2112

For: SHIELDED ROUTING TOPOLOGY FOR
HIGH SPEED MODULES

Examiner: T. U. Vu

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Appellant respectfully requests a review of the legal and factual bases for the rejections in the above-identified patent application. Pursuant to the guidelines set forth in the Official Gazette Notice of July 12, 2005 for the Pre-Appeal Brief Conference Program, favorable reconsideration of the subject application is respectfully requested in view of the following remarks.

The claimed invention relates to a bus routing topology for a bus system in which every pair of signal lines are provided with shielding, thereby effectively limiting signal cross-talk to only one signal pair while minimizing the number of pins required on a connector. By shielding only every pair of signal lines, the number of connector pins is significantly reduced, thus reducing the size and cost of the connector and module on which the connector is provided.

According to the Office Actions dated June 29, 2006 and January 9, 2006, claims 1-2, 5-9, 11-12, 14-16, 18-20, 24, 26-27, 29-31, and 33 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,658,530 ("Robertson") in view of Alleged Admitted Prior Art ("AAPA").

Robertson discloses a memory module. The memory module includes printed circuit board (PCB) 101 and a connector 102. The PCB 101 features signal traces 103 that are arranged to be as short as possible. The PCB 101 includes a power layer, an electrical ground layer, and a plurality of signal layers. Robertson does not teach or suggest a circuit card with "a plurality of shields supported by the circuit card" where "a plurality of signal lines supported by the circuit card" are "grouped in a plurality of adjacent corresponding pairs" and a shield is "located respectively on each side of each of said plurality of corresponding pairs of said signal lines," as recited by claim 1.

Instead, Robertson teaches a grounding arrangement that involves ground pins 106 that are part of the connector 102. Robertson is silent regarding "shields supported by the circuit card," PCB 101. Consequently, Robertson teaches nothing about shields "located respectively on each side of each of [a] plurality of corresponding pairs of [circuit element] signal lines" supported on the circuit card.

The Office Actions acknowledge that Robertson does not "disclose shields that extend the entire length of the signal to the circuit card and supported by the circuit card." (Office Action of June 29, 2006, at 2-3). The Office Actions rely on the AAPA to remedy this deficiency. Appellant respectfully submits that, absent hindsight of the claimed invention, one of ordinary skill in the art, following the teachings of Robertson, would not be motivated to follow the teachings of the AAPA to add shields that extend the entire length of the signal to the circuit cards, but would instead be motivated by Robertson to eliminate the shields of AAPA and simply provide ground connector pins, as Robertson teaches, to eliminate cross talk.

In effect, Robertson teaches away from the claimed invention by his teaching that simply adding ground pins between groups of signal pins, will eliminate cross talk. Robertson teaches to eliminate the shields of AAPA because the *properties of the ground pins 106 and the shields of the AAPA vary*. For instance, the ground pin 106 is connected to an electrical ground layer (col. 4, line 21) of PCB 101. Also, the pin 106 is located as part of the *connector* 102, and not “supported by the circuit card” as in the claimed invention. Further, the ground pin 106 provides a “low resistance path for return currents from the memory module.” (col. 3, lines 60-64). The claimed invention, on the other hand, teaches that the shields provide a coupling path from the signal lines to ground (except for between the corresponding pairs of signal lines). (¶ 0024). Robertson’s signal traces are not shielded at all, and Robertson does not suggest that they should be or need be shielded to eliminate cross talk. The properties of Robertson and AAPA vary and thus cannot be combined to disclose, teach or suggest the claimed invention. Accordingly, Appellant submits that the claimed invention would not have been obvious to one of ordinary skill in the art.

Furthermore, Robertson fails to teach or suggest how to modify AAPA to obtain the claimed invention. There is therefore no *prima facie* case of obviousness. Obviousness is based on factual findings. “Whether a patent claim is obvious under section 103 depends upon the answer to several factual questions and how the factual answers meld into the legal conclusion of obviousness *vel non*.” *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351 (Fed. Cir. 2001). The four underlying factual inquiries are: (1) the scope and content of the prior art; (2) the differences between the claims and the prior art; (3) the level of ordinary skill in the pertinent art; and (4) secondary considerations, if any, of non-obviousness. *Graham v. John Deere Co.*, 393 U.S. 1, 17-18 (1966).

Appellant respectfully submits that there is no motivation to combine the cited references to obtain the invention of claims 1, 6, 8, 11, 15, 18, 19, 26, 30, and 33. Motivation or suggestion to combine or modify prior art references “must be clear and particular, and it must be supported by actual evidence.” *Teleflex, Inc. v. Ficosa North America Corp.*, 299 F.3d 1313, 1334 (Fed. Cir. 2002). Because the “genius of invention is often a combination of known elements which in hindsight seems preordained,” the Federal Circuit requires a “rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.” *McGinley*, 262, F.3d at 1351. Yet there is no teaching or suggestion within any of the references that provide a motivation to combine them.

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990). Thus, a showing of an obvious combination requires more than just an amalgam of references, each of which provides one feature of the claimed invention.

The Office Actions have done no more than cite a pair of references, each of which allegedly provides only part of the claimed invention, and allege that their combination renders the invention obvious. However, without the benefit of hindsight, there would have been no motivation to combine these references and the Office Actions have failed to provide proof of any such motivation. This is one more reason why claims 1, 6, 8, 11, 15, 18, 19, 26, 30, and 33 are allowable over the cited combination.

The Office Actions state that there is motivation to combine AAPA and Robertson because “one of ordinary skill in the art would recognize the benefit of having the entire length of signal lines shielded to reduce cross-talk along the entire signal lines compared to just reduce cross-talk at the pins.” (Office Action of June 29, 2006, at 10-11). However, as discussed above, there is no motivation to combine

because Robertson teaches to eliminate the shields of AAPA by teaching the use of ground pins 106. The properties of ground pins 106 are different from the shields disclosed in AAPA. Accordingly, Appellant submits that the claimed invention would not have been obvious to one of ordinary skill in the art.

Claims 2 and 5 depend from claim 1, claim 7 depends from claim 6, claim 9 depends from claim 8, claims 12 and 14 depend from claim 11, and claim 16 depends from claim 15 and are patentable for at least the same reasons. Claim 18 is patentable for at least the same reasons. Claim 19 and dependent claims 20 and 24, claim 26 and dependent claims 27 and 29, and claim 30 and its dependent claim 31 are patentable for at least the same reasons. Claim 33 is patentable for at least the same reasons.

Further, according to the Office Actions dated June 29, 2006 and January 1, 2006, some dependent claims stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Robertson and the AAPA and certain patents, such as U.S. Patent No. 6,216,205 ("Chin"), U.S. Patent No. 6,257,587 ("Ortega"), and U.S. Patent No. 6,526,462 ("Elabd"). The Office Actions have acknowledged for each of the rejections that the prior art references, Chin, Ortega, and Elabd, are relied on for different reasons and do not disclose, teach or suggest the limitations of the independent claims 1, 6, 8, 11, 15, 18, 19, 26, 30, and 33. Accordingly, Chin, Ortega, and Elabd do not remedy the deficiencies of the Robertson and the AAPA combination.